

ENEA NEUTRON DATA COMPILATION CENTREProgress Report

presented at the INDC meeting, Vienna, May 13 - 17, 1968, by V.J. Bell, Head of the Centre.

The period which has passed since the last INDC meeting has been one of consolidation for the ENEA Neutron Data Compilation Centre. The CCDN has reached its present working complement of 17 staff, 8 of which are professional, and is now approaching the working level which is considered adequate for it to complete its Statute and Tasks. The work of the CCDN in the field of neutron data exchange covers the activities of CINDA references, storage and retrieval of experimental neutron data, distribution of evaluated data files, and the development of storage and retrieval systems.

After the publication in March 1967 of the second supplement to CINDA 66, the preparation work for CINDA 67 was concentrated on removing a number of defects which were apparent in the present CINDA publication. These defects were the existence of some gaps in the coverage of the main journals, and the presence of groups of entries for the same work, because of the publication of this work in several different places. Many of the older entries for European literature had to be improved to the present standards of format and information content before they could be machine-sorted for comparison with possibly similar entries. CINDA 67 was issued in October after the main bulk of correction and checking had been done. It still contains, however, many sets of equivalent entries for the same experiments, which will be largely eliminated before CINDA 68 is published in June 1968. A major effort has also been made to make the EVALUATION entries complete. This work was made in conjunction with the preparation of the evaluation list (CCDN-W4/5). At the same time, a consultant was employed to check CINDA against the references contained in the Karlsruhe evaluations (KFK-120) and this work located many further entries to material published before the Centre began systematic coverage. Lists of entries were sent out to the readers covering the journals for which they are each responsible and lists for the entries from each laboratory have been sent out for checking before the publication of CINDA 68.

New programmes which have been developed within the CINDA system include improved LABORATORY and REFERENCE sorts, and programmes to simplify manual searches for duplicate or equivalent entries. Discussions have been held in co-operation with the IAEA on the changes which would be necessary to allow

CINDA to become the bibliographical part of a combined neutron data system. In addition, a CINDA Reader's Manual was prepared to replace, update and correct the earlier 1964 edition. This was distributed in February 1968.

The present work of the data compilation group, besides keeping up with all new material, involves back coverage of journals, the comparison with published compilations on specific subjects, the elimination of redundant information and the establishment of generic relations between multiply published material. The CINDA publication is useful here for establishing multiple publication, and, when the Centre has received requests for data, for discovering additional references for which data have not been coded and entered into the data file.

During the current period the Main Library has been augmented by 47,600 data points from the CCDN and 140,000 from BNL. The Main Library now contains the order of one million data points.

A regular system for the exchange of update runs has now been established with the National Neutron Cross Section Center at BNL and as a result the CCDN dispatches and receives update runs on a quarterly basis. Data have been sent from the CCDN in October 1967, December 1967, and February 1968.

At present all new material known to the Centre and within the Centre's geographic area is entered, and the major problem is the effort involved in going backwards in time especially as reinforcing information is increasingly difficult to obtain. The production now is on the level of 50 references (articles, reports, etc.) per month.

As the services of the Centre have become more well known and the growing usefulness of the Master Data Tape appreciated, the number of requests for data and other information has steadily increased. During the period, the CCDN received the following number of retrieval requests from its member countries:

Belgium	5
France	22
Germany	9
Italy	5
Japan	2
Spain	2
Sweden	8
United Kingdom	9

Each of these requests consists of a number of sub-requests into the retrieval programme. For example, some retrievals give more than 60,000 data points from a few experiments, whilst others may concern many references each containing only a few data points.

With the extension in the second half of 1967 of the agreement between the IAEA and ENEA to cover the exchange of compiled data, 71 Dastar references were received from the Nuclear Data Unit and 7 large retrievals were made by the CCDN at their request.

The Centre is regularly publishing a List of Available Evaluations. The first issue from CCDN (Newsletter no 5, April 1967) was an up-dated and improved version of a publication prepared by K. Parker of the UKAEA and L. Wallin for the 1966 Paris Conference on Nuclear Data. The material has been continuously up-dated and a new list has been published as Newsletter no 7 in March 1968. A certain concentration of the present evaluation activities is apparent, and most of the new contributions are related to the UK Nuclear Data Library, the ENDF/B file and the KEDAK library, or are at least produced in a format compatible with one of the above.

The CCDN has continued its activities in distributing evaluated nuclear data files. A library of evaluated data files, which is described in the Newsletter no 7 (March 1968) of the CCDN, is kept at the Centre, and a distribution service of the whole or part of these files is offered.

The library of evaluations has in the meantime been extended by the release in September 1967 of the ENDF/B category I material, which now consists of 57 files. These files are regularly distributed to about 25 recipients in Europe and Japan.

The capture cross section files for fission products by Professor Benzi of CNEN-Bologna, have recently been amended and extended and the new version was made available to the Centre in March 1968. The material has been revised and extended in the low energy range by the Australian AEC.

The KEDAK files of Dr. Schmidt, of KFK Karlsruhe, have now been released and are available in the Centre. A minor format transformation, however, has to be applied in order to make these files generally applicable.

Some new files of fission cross sections from the UK Nuclear Data Library were received from Winfrith. These have been included in the new version of the library (released in February 1968). The same is the case for the file on U-238 by Ravier and Vastel and a new file on Cu related to the work of Benzi and Häggblom.

The Centre has recently devoted a large amount of effort to the development of an efficient data storage and retrieval system for the 360/30. Work started originally on developing a system for the 360/30 which could be used for the storage and retrieval of data prepared in the SCISRS I format. The

present programme which is now nearing completion goes, however, considerably beyond the original SCISRS I system and by sub-dividing the data store into a comment file, an index file and a tabular data file, achieves a non redundant storage system for the data which is essential as the total number of data points approaches its present level of one million. Work continues on the application of direct access methods for the storage and retrieval of data from these files and on the preparation of a "clean" file which is compatible with the existing NNCSC file at Brookhaven. The Centre has also recently implemented the ECSIL system of the Livermore group on the 360/30 and these two systems together give an added flexibility to those quantities which can be stored and retrieved from the CCDN. In the longer term the Centre is going to participate in the developments now taking place at the NNCSC on the development of a new general purpose data storage and retrieval system. It is intended that the European countries represented by the CCDN will participate vigorously in this project by both coordinating the European reaction to the original proposals and also by sending CCDN personnel to work for periods of time in Brookhaven.

ENEA NEUTRON DATA COMPILATION CENTRE

Progress Report presented at INDC meeting,
Vienna May 13th - 17th, 1968 by V.S. Bell, Head of the Centre.

The period which has passed since the last INDC meeting has been one of consolidation for the ENEA Neutron Data Compilation Centre. The CCDN has reached its present working complement of 17 staff, 8 of which are professional, and is now approaching the working level which is considered adequate for it to complete its Statute and Tasks. The work of the CCDN in the field of neutron data exchange covers the activities of CINDA references, storage and retrieval of experimental neutron data, distribution of evaluated data files, and the development of storage and retrieval systems.

After the publication in March 1967 of the second supplement to CINDA 66, the preparation work for CINDA 67 was concentrated on removing a number of defects which were apparent in the present CINDA publication. These defects were the existence of some gaps in the coverage of the main journals, and the presence of groups of entries for the same work, because of the publication of this work in several different places. Many of the older entries for European literature had to be improved to the present standards of format and information content before they could be machine-sorted for comparison with possibly similar entries. CINDA 67 was issued in October after the main bulk of correction and checking had been done. A major effort had ^{also} been made to make the EVALUATION entries complete. This work was made in conjunction with the preparation of the evaluator list (CCDN-NW/5). It still contains, however, many sets of equivalent entries for the same experiments, which will be largely eliminated before CINDA 68 is published in June 1968. At the same time, a consultant was employed to check CINDA against the references contained in the Karlsruhe evaluations (KFK-120) and this work located many further entries to material published before the Centre began systematic coverage. Lists of entries were sent out to the readers covering the journals for which they are each responsible and lists for the entries from each laboratory have been sent out for checking before the publication of CINDA 68.

New programmes which have been developed within the CINDA system include improved LABORATORY and REFERENCE sorts, and programmes to simplify manual searches for duplicate or equivalent entries. Discussions have been held in co-operation with the IAEA on the changes which would be necessary to allow CINDA to become the bibliographical part of a combined neutron data system. In addition, a CINDA Reader's Manual was prepared to replace, update and correct the earlier 1964 edition. This was distributed in February 1968.

The present work of the data compilation group, besides keeping up with all new material, involves back coverage of journals, the comparison with published compilations on specific subjects, the elimination of redundant information and the establishment of generic relations between multiply published material. The CINDA publication is useful here for establishing multiple publication, and, when the Centre has received requests for data, for discovering additional references for which data have not been coded and entered into the data file.

During the current period the Main Library has been augmented by 47,600 data points from the CCDN and 140,000 from BNL. The Main Library now contains the order of one million data points.

A regular system for the exchange of update runs has now been established with the National Neutron Cross Section Center at BNL and as a result the CCDN dispatches and receives update runs on a quarterly basis. Data have been sent from the CCDN in October 1967, December 1967, and February 1968.

At present all new material known to the Centre and within the Centre's geographic area is entered, and the major problem is the effort involved in going backwards in time especially as reinforcing information is increasingly difficult to obtain. The production now is on the level of 50 references (articles, reports, etc.) per month.

As the services of the Centre have become more well known and the growing usefulness of the Master Data Tape appreciated, the number of requests for data and other information has steadily increased. During the period, the CCDN received the following number of retrieval requests from its member countries :

Belgium	5
France	22
Germany	9
Italy	5
Japan	2
Spain	2
Sweden	8
United Kingdom	9

Each of these requests consists of a number of sub-requests into the retrieval programme. For example, some retrievals give more than 60,000 data points from a few experiments, whilst others may concern many references each containing only a few data points.

With the extension in the second half of 1967 of the agreement between the IAEA and ENEA to cover the exchange of compiled data, 71 Dastar references were received from the Nuclear Data Unit and 7 large retrievals were made by the CCDN at their request.

The Centre is regularly publishing a List of Available Evaluations. The first issue from CCDN (Newsletter n° 5, April 1967) was an up-dated and improved version of a publication prepared by K. Parker of the UKAEA and L. Wallin for the 1966 Paris Conference on Nuclear Data. The material has been continuously up-dated and a new list has been published as Newsletter n° 7 in March 1968. A certain concentration of the present evaluation activities is apparent, and most of the new contributions are related to the UK Nuclear Data Library, the ENDF/B file and the KEDAK library, or are at least produced in a format compatible with one of the above.

The CCDN has continued its activities in distributing evaluated nuclear data files. A library of evaluated data files, which is described in the Newsletter n° 7 (March 1968) of the CCDN, is kept at the Centre, and a distribution service of the whole or part of these files is offered.

The library of evaluations has in the meantime been extended by the release in September 1967 of the ENDF/B category I material, which now consists of 57 files. These files are regularly distributed to about 25 recipients in Europe and Japan.

The capture cross section files for fission products by Professor Benzi of CNEN-Bologna, have recently been amended and extended and the new version was made available to the Centre in March 1968. The material has been revised and extended in the low energy range by the Australian AEC.

The KEDAK files of Dr. Schmidt, of KFK Karlsruhe, have now been released and are available in the Centre. A minor format transformation, however, has to be applied in order to make these files generally applicable.

Some new files of fission cross sections from the UK Nuclear Data Library were received from Winfrith. These have been included in the new version of the library (released in February 1968). The same is the case for the file on U-238 by Ravier and Vastel and a new file on Cu related to the work of Benzi and Häggblom.

The Centre has recently devoted a large amount of effort to the development of an efficient data storage and retrieval system for the 360/30. Work started originally on developing a system for the 360/30 which could be used for the storage and retrieval of data prepared in the SCISRS I format. The present programme which is now nearing completion goes, however, considerably beyond the original SCISRS I system and by sub-dividing the data store into a comment file, an index file and a tabular data file, achieves a non redundant storage system for the data which is essential as the total number of data points approaches its present level of one million. Work continues on the application of direct access methods for the storage and retrieval of data from these files and on the preparation of a "clean" file which is compatible with the existing NNCSC file at Brookhaven. The Centre has also recently implemented the ECSIL system of the Livermore group on the 360/30 and these two systems together give an added flexibility to those quantities which can be stored and retrieved from the CCDN. In the longer term the Centre is going to participate in the developments now taking place at the NNCSC on the development of a new general purpose data storage and retrieval system. It is intended that the European countries represented by the CCDN will participate vigorously in this project by both coordinating the European reaction to the original proposals and also by sending CCDN personnel to work for periods of time in Brookhaven.

ENEA NEUTRON DATA COMPILATION CENTREProgress Report

presented at the INDC meeting, Vienna, May 13 - 17, 1968, by V.J. Bell, Head of the Centre.

The period which has passed since the last INDC meeting has been one of consolidation for the ENEA Neutron Data Compilation Centre. The CCDN has reached its present working complement of 17 staff, 8 of which are professional, and is now approaching the working level which is considered adequate for it to complete its Statute and Tasks. The work of the CCDN in the field of neutron data exchange covers the activities of CINDA references, storage and retrieval of experimental neutron data, distribution of evaluated data files, and the development of storage and retrieval systems.

After the publication in March 1967 of the second supplement to CINDA 66, the preparation work for CINDA 67 was concentrated on removing a number of defects which were apparent in the present CINDA publication. These defects were the existence of some gaps in the coverage of the main journals, and the presence of groups of entries for the same work, because of the publication of this work in several different places. Many of the older entries for European literature had to be improved to the present standards of format and information content before they could be machine-sorted for comparison with possibly similar entries. CINDA 67 was issued in October after the main bulk of correction and checking had been done. It still contains, however, many sets of equivalent entries for the same experiments, which will be largely eliminated before CINDA 68 is published in June 1968. A major effort has also been made to make the EVALUATION entries complete. This work was made in conjunction with the preparation of the evaluation list (CCDN-NW/5). At the same time, a consultant was employed to check CINDA against the references contained in the Karlsruhe evaluations (KFK-120) and this work located many further entries to material published before the Centre began systematic coverage. Lists of entries were sent out to the readers covering the journals for which they are each responsible and lists for the entries from each laboratory have been sent out for checking before the publication of CINDA 68.

New programmes which have been developed within the CINDA system include improved LABORATORY and REFERENCE sorts, and programmes to simplify manual searches for duplicate or equivalent entries. Discussions have been held in co-operation with the IAEA on the changes which would be necessary to allow

CINDA to become the bibliographical part of a combined neutron data system. In addition, a CINDA Reader's Manual was prepared to replace, update and correct the earlier 1964 edition. This was distributed in February 1968.

The present work of the data compilation group, besides keeping up with all new material, involves back coverage of journals, the comparison with published compilations on specific subjects, the elimination of redundant information and the establishment of generic relations between multiply published material. The CINDA publication is useful here for establishing multiple publication, and, when the Centre has received requests for data, for discovering additional references for which data have not been coded and entered into the data file.

During the current period the Main Library has been augmented by 47,600 data points from the CCBN and 140,000 from BNL. The Main Library now contains the order of one million data points.

A regular system for the exchange of update runs has now been established with the National Neutron Cross Section Center at BNL and as a result the CCBN dispatches and receives update runs on a quarterly basis. Data have been sent from the CCBN in October 1967, December 1967, and February 1968.

At present all new material known to the Centre and within the Centre's geographic area is entered, and the major problem is the effort involved in going backwards in time especially as reinforcing information is increasingly difficult to obtain. The production now is on the level of 50 references (articles, reports, etc.) per month.

As the services of the Centre have become more well known and the growing usefulness of the Master Data Tape appreciated, the number of requests for data and other information has steadily increased. During the period, the CCBN received the following number of retrieval requests from its member countries:

Belgium	5
France	22
Germany	9
Italy	5
Japan	2
Spain	2
Sweden	8
United Kingdom	9

Each of these requests consists of a number of sub-requests into the retrieval programme. For example, some retrievals give more than 60,000 data points from a few experiments, whilst others may concern many references each containing only a few data points.

With the extension in the second half of 1967 of the agreement between the IAEA and NNDA to cover the exchange of compiled data, 71 Dastar references were received from the Nuclear Data Unit and 7 large retrievals were made by the CCNE at their request.

The Centre is regularly publishing a List of Available Evaluations. The first issue from CCNE (Newsletter no 5, April 1967) was an up-dated and improved version of a publication prepared by K. Parker of the UKAEA and L. Wallin for the 1966 Paris Conference on Nuclear Data. The material has been continuously up-dated and a new list has been published as Newsletter no 7 in March 1968. A certain concentration of the present evaluation activities is apparent, and most of the new contributions are related to the UK Nuclear Data Library, the ENDF/B file and the KEDAK library, or are at least produced in a format compatible with one of the above.

The CCNE has continued its activities in distributing evaluated nuclear data files. A library of evaluated data files, which is described in the Newsletter no 7 (March 1968) of the CCNE, is kept at the Centre, and a distribution service of the whole or part of these files is offered.

The library of evaluations has in the meantime been extended by the release in September 1967 of the ENDF/B category I material, which now consists of 57 files. These files are regularly distributed to about 25 recipients in Europe and Japan.

The capture cross section files for fission products by Professor Bessi of CNEN-Bologna, have recently been amended and extended and the new version was made available to the Centre in March 1968. The material has been revised and extended in the low energy range by the Australian ANU.

The KEDAK files of Dr. Schmidt, of KFK Karlsruhe, have now been released and are available in the Centre. A minor format transformation, however, has to be applied in order to make these files generally applicable.

Some new files of fission cross sections from the UK Nuclear Data Library were received from Winfrith. These have been included in the new version of the library (released in February 1968). The same is the case for the file on U-238 by Xavier and Vastel and a new file on Cu related to the work of Bessi and Haggblom.

The Centre has recently devoted a large amount of effort to the development of an efficient data storage and retrieval system for the 360/30. Work started originally on developing a system for the 360/30 which could be used for the storage and retrieval of data prepared in the SCISS I format. The

present programme which is now nearing completion goes, however, considerably beyond the original SCISRS I system and by sub-dividing the data store into a comment file, an index file and a tabular data file, achieves a non redundant storage system for the data which is essential as the total number of data points approaches its present level of one million. Work continues on the application of direct access methods for the storage and retrieval of data from these files and on the preparation of a "clean" file which is compatible with the existing NNCSG file at Brookhaven. The Centre has also recently implemented the ECSIL system of the Livermore group on the 360/30 and these two systems together give an added flexibility to those quantities which can be stored and retrieved from the CCBN. In the longer term the Centre is going to participate in the developments now taking place at the NNCSG on the development of a new general purpose data storage and retrieval system. It is intended that the European countries represented by the CCBN will participate vigorously in this project by both coordinating the European reaction to the original proposals and also by sending CCBN personnel to work for periods of time in Brookhaven.